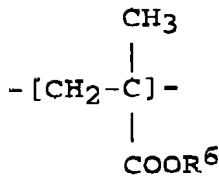


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(c)



wherein R⁶ denotes an alkyl group having 1 to 3 carbon atoms.

REMARKS

Application Amendments

Claims 1-13 are pending in this application and all presently stand rejected. By the amendments presented herein, Applicant amends the Specification, and Claim 4, whereupon Claims 1-13 remain to be examined. No fee is believed to be due as a result of these amendments. No new matter is being added.

The Specification has been amended to more distinctly define the present invention.

Claim 4 has been added amended to more distinctly claim particular embodiments of the invention by claiming particular amphoteric polymers that may be used in the invention. Basis lies, at least, at page 3, line 20 through page 4, line 34, of the Application as originally filed.

Therefore, reconsideration and withdrawal of the claim rejection under 35 U.S.C. 112 is ask to be withdrawn.

INSTANT INVENTION

The invention in the above-entitled application is directed to a hair styling composition comprising by weight: (a) from about 0.2% to about 5% of an anionic polymer; (b) from about 0.2% to about 5% of a cationic polymer; (c) from about 0.2% to about 5% of an amphoteric polymer; and (d) a solvent; wherein the total of components (a), (b), and (c) is from about 0.6 to about 15%, and wherein the level of the component comprised at the lowest level among components (a), (b), and (c) is at least about 5% of that of the component comprised at the highest level among components (a), (b), and (c).

35 U.S.C. § 103

Under 35 U.S.C. §103(a), Claims 1-13 were rejected as being unpatentable over U.S. Pat. No. 4,240,450, issued to Grollier, et al. [hereinafter "Grollier"]. Further, under 35 U.S.C. §103(a), Claims 1-13 were further rejected as being unpatentable over U.S. Pat. No. 5,254,333, issued to Kajino et al. [hereinafter "Kajino"]. Applicant respectfully traverses these rejections as applied to Claims 1-13 in view of the arguments presented herein.

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Brief Summary of Grollier and Kajino

Grollier relates to compositions for the treatment of keratin material, in particular human hair, skin and nails, comprising a combination of a cationic polymer with an anionic polymer. Grollier states that the anionic polymer can be retained well on the hair, even after rinsing, when applied with the cationic polymer.

Kajino relates to hair dye compositions comprising an acidic dye, 2-benzyloxyethanol and a water-soluble compound.

Examiner's Contentions and Applicant's Arguments

To establish a *prima facie* case of obviousness, under 35 U.S.C. §103, three elements must be met: (a) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings; and (b) there must be a reasonable expectation of success; and (c) the prior art reference(s) must teach or suggest all the claim limitations. *In re Fine*, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Merck & Co., Inc.*, 231 USPQ 375 (Fed. Cir. 1986); *In re Royka*, 180 USPQ 580 (CCPA 1974). See also, MPEP 2142. Applicant submits that the references cited by Examiner fails to establish a *prima facie* case of obviousness.

Examiner states that both Grollier and Kajino teach the use of a combination of amphoteric, cationic and anionic polymers and non-ionic surfactants. The Examiner further contends that it would have been well within the skill of one of ordinary skill in the art to arrive at the various amounts through optimization of the prior art values depending on the desired characteristics of the composition, for example, length of hold, flexibility, resistance to humidity and foaming. (See *In re Aller*, 105 USPZ 233, 235 (CCPA 1995 "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation."; See also *In re Hoeschele*, 160 USPQ 809 (CCPA 1969) (Claimed elastomeric polyurethanes which fell within the broad scope of the references were held to be unpatentable thereover because, among other reasons, there was no evidence of the criticality of the claimed ranges of molecular weight or molar proportions.).

Applicant's respectfully traverses the Examiner's position that the present invention is simply the case wherein one of ordinary skill in the art could simply arrive at the present invention through optimization of the two prior art values depending on the desired characteristics of the composition, for example. There is no hint or suggestion that such compositions would provide flexible and good holding film texture, which cannot be achieved by single use of or combination of two of any of the above-mentioned three types of polymers. Thus, this does not meet the first criteria required to establish a *prima facie* case of obviousness.

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Further, Applicant has addressed the Examiner's comments above by providing comparative data demonstrating unexpected results in the attached Rule 132 Declaration and will be discussed in more detail below.

2. Unexpected Results

A) Rule 132 Declaration

In the enclosed Declaration, Mr. Nambu describes tests which were performed to compare hair comb index values for compositions representative of the present invention as described above compared to hair comb index values for a composition containing only an amphoteric polymer, an anionic polymer or a cationic polymer, each separately. A hair comb index value measures adhesive force performance between the values of 1.00 and 0.00. A standard hair styling polymer with high concentrate will result in a hair comb index of 1.00 and water treatment results in a hair comb index of 0.00.

The data set forth in Table 1 demonstrates that three different polymers, namely an amphoteric, cationic and anionic polymer (K201), at a specific level and ratio, achieved a higher comb index when compared to compositions containing each polymer separately. The combination and specific levels and specific ratio of the three different polymers in K201 provided a statistically significant higher hair comb index when compared to the compositions comprising each polymer separately. N152, K143D and K143E represent compositions containing a commonly known range for each polymer, wherein National Starch shares their formula examples.

The composition with the specific ratio and level combination of the three polymers (K201) achieved a higher comb index that provides higher hair fiber styling effects. Further studies have demonstrated that K201 provides a desired level of flexible film that fingers can play. Therefore, K201 provides a three-polymer ratio and level which forms resin film which is flexible on hair. On the other hand, when concentrates of N152, K143D and K143E are placed on hair, they form brittle films or do not form a film. Therefore, the three polymer combination in K201 can provide more flexible film than each single polymer composition.

According to the data in Table 1, in order to formulate hair styling products with acceptable and/or improved hair comb indexes, viscosity is also important to be distributed. Therefore, each polymer concentrate can vary to supply adequate viscosity. For instance, 3% of H100 gives too high viscosity for styling products in a water formula. It is difficult to add more polymers and achieve an acceptable viscosity for the composition. Therefore, with the three type of polymer mixture, as shown in K201, at the specific levels and ratios, has resulted and contributes to manage acceptable and improved polymer distribution on hair shafts.

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B) Art Rejections Revisited

Based upon the Rule 132 Declaration of Takanori Nambu submitted herewith, it is respectfully submitted that neither Grollier or Kajino teach, and even more importantly, suggest the improved benefits made possible by Applicant's claimed composition.

Clearly, the data shown in Table 1 demonstrates that all polymers, and specifically the single polymers, to not behave the same and are not interchangeable. Further, in reviewing the results for each of the single polymers, there is no hint or suggestion that such compositions would provide improved flexible and good holding film texture, which cannot be achieved by single use of or even the combination of two of any of the above-mentioned three types of polymers. Thus, this does not meet the first criteria required to establish a *prima facie* case of obviousness.

The unexpected results for the specific ratio and combination levels for the three polymers, were not simply achieved through routine experimentation. Applicant has noted in the Declaration that a high amount of experimentation and understanding is required in order to achieve improved efficacy as well as formulating a composition wherein its viscosity is appropriately distributed. Each polymer concentratc can vary to supply adequate viscosity. Therefore, with three types of polymers mixtures, this will also contribute to manage polymer distribution on hair shafts and thus, it is not easy to add more than one polymer together, using routine experimentation, and achieve the unexpected results that the present invention has attained. Applicant has clearly demonstrated in this Declaration, the criticality of the claimed ratio and levels. Grollier simply mentions that their compositions "may contain" or "can contain" an various polymer (col. 44, lines 39-41; col. 49, lines 23-31) Such a disclosure in Grollier would clearly not lead to the unexpected results and criticality of the claimed ratios and ranges for the three specific polymers, as demonstrated in the Declaration. As stated in the Declaration, the single polymer compositions were representative of commonly known and used ranges for each polymer. Therefore, this would representative of what was conventionally known to those of skill in the art. And upon examination of the data in the Declaration for each of the single polymers and the specific levels conventionally uscd. and further, in reviewing the results for each of the single polymers, there is no hint or suggestion that the such compositions would provide improved flexible and good holding film texture, which cannot be achieved by single use of or even the combination of two of any of the above-mentioned three types of polymers.

Further, according to the Declaration, when concentrates of any of the three single polymers dried on hair, they would make brittle films or not form films. Therefore, one of skill in the art would not be led, and there is no hint or suggestion that such compositions would provide improved films, which cannot be achieved by single use or even the combination of two of any of the above-mentioned types of polymers. However, the present invention's specific combination and ratio provides an improved level of flexible film that fingers can play. Clearly, one of skill in the art

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would not have been able to merely substitute or add one of the polymers, with a reasonable expectation of achieving improved results. Further, as mentioned above, other factors, such as viscosity, must also be evaluated and measured, in order to achieve improved efficacy.

Therefore, Applicant has demonstrated that the present invention provides unexpected results over the prior art. Further, Applicant has demonstrated that all of the criteria has not been met in order to establish a prima facie case of obviousness, particularly the elements that there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.

Conclusion

Applicant has made an earnest effort to place their Specification and Claims in proper form, as well as to provide comparative data in order to ascertain the unexpected results for the present composition over the applied art. WHEREFORE, Applicant respectfully requests consideration of the remarks and accompanying Rule 132 Declaration submitted herewith, and allowance of Claims 1-13.

Respectfully submitted,
Takanori Nambu,

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April 15, 2003
Customer No. 27752

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VERSION WITH MARKINGS TO SHOW CHANGES MADE**In the Specification:**

Paragraph beginning at page 12, line 8 has been amended as follows:

–Useful polymers are adipic acid/dimethylaminohydroxypropyl-diethylenetriamine copolymers sold under the name CARTARETIN[E] F, F⁴ or F⁸ by SANDOZ. –

Paragraph beginning at page 15, line 6 has been amended as follows:

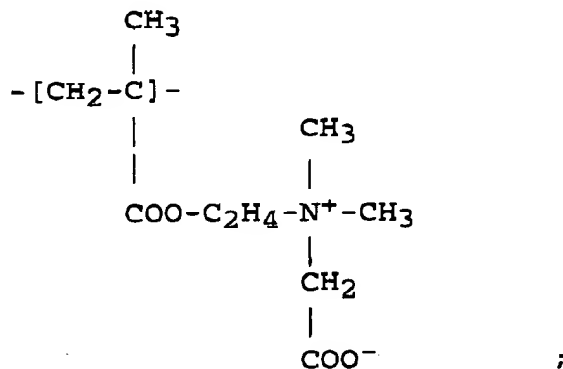
–Useful polymers are Quaternium 38, 37, 49 and 42 in the CTFA, acrylamide/beta-methacryloyloxyethyl-trime-thylammonium methosulphate copolymers provided [sold under the names Teten 205,210,220 and 240] by Hercules, and aminoethylacrylate phosphate/acrylate copolymer sold under the name Catrex by National Starch & Chemicals, and the crosslinked graft cationic copolymers having a molecular weight of 10,000 to 1,000,000, and preferably of 15,000 to 500,000, and resulting from the copolymerisation of: at least one cosmetic monomer, dimethylaminoethyl methacrylate, polyethylene glycol and a polyunsaturated crosslinking agent, such as those mentioned in the CTFA dictionary under the name AMODIMETHICONE, such as the product marketed as a mixture with other ingredients under the name DOW CORNING 929 cationic emulsion.–

In the Claims:

Claim 4 has been amended as follows:

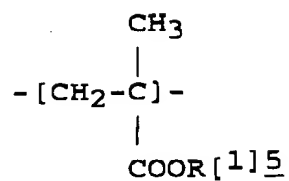
4. (Twice Amended) The hair styling composition according to Claim 1, wherein said amphoteric polymer comprises the following units [selected from the group consisting of]:

(a)



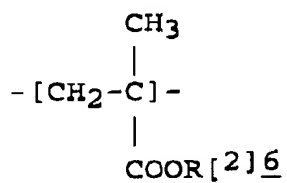
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(b)



wherein $\text{R}^{[1]5}$ denotes an alkyl group having 4 to 18 carbon atoms;

(c)



wherein $\text{R}^{[2]6}$ denotes an alkyl group having 1 to 3 carbon atoms; and

(d) mixtures thereof.]